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DB=USPT; PLUR=YES; OP=OR

<input type="checkbox"/>	L6	'5370995'.pn.	1
<input type="checkbox"/>	L5	Amber AND L4	11
<input type="checkbox"/>	L4	Escherichia AND L3	45
<input type="checkbox"/>	L3	Orthogonal AND L2	52
<input type="checkbox"/>	L2	L1 AND bacillus	2531
<input type="checkbox"/>	L1	(tyrosyl tRNA)	9029

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NEWS	2		"Ask CAS" for self-help around the clock
NEWS	3	OCT 23	The Derwent World Patents Index suite of databases on STN has been enhanced and reloaded
NEWS	4	OCT 30	CHEMLIST enhanced with new search and display field
NEWS	5	NOV 03	JAPIO enhanced with IPC 8 features and functionality
NEWS	6	NOV 10	CA/CAPLUS F-Term thesaurus enhanced
NEWS	7	NOV 10	STN Express with Discover! free maintenance release Version 8.01c now available
NEWS	8	NOV 20	CA/CAPLUS to MARPAT accession number crossover limit increased to 50,000
NEWS	9	DEC 01	CAS REGISTRY updated with new ambiguity codes
NEWS	10	DEC 11	CAS REGISTRY chemical nomenclature enhanced
NEWS	11	DEC 14	WPIDS/WPINDEX/WPIX manual codes updated
NEWS	12	DEC 14	GBFULL and FRFULL enhanced with IPC 8 features and functionality
NEWS	13	DEC 18	CA/CAPLUS pre-1967 chemical substance index entries enhanced with preparation role
NEWS	14	DEC 18	CA/CAPLUS patent kind codes updated
NEWS	15	DEC 18	MARPAT to CA/CAPLUS accession number crossover limit increased to 50,000
NEWS	16	DEC 18	MEDLINE updated in preparation for 2007 reload
NEWS	17	DEC 27	CA/CAPLUS enhanced with more pre-1907 records
NEWS	18	JAN 08	CHEMLIST enhanced with New Zealand Inventory of Chemicals
NEWS	19	JAN 16	CA/CAPLUS Company Name Thesaurus enhanced and reloaded
NEWS	20	JAN 16	IPC version 2007.01 thesaurus available on STN
NEWS	21	JAN 16	WPIDS/WPINDEX/WPIX enhanced with IPC 8 reclassification data
NEWS	22	JAN 22	CA/CAPLUS updated with revised CAS roles
NEWS	23	JAN 22	CA/CAPLUS enhanced with patent applications from India
NEWS	24	JAN 29	PHAR reloaded with new search and display fields
NEWS	25	JAN 29	CAS Registry Number crossover limit increased to 300,000 in multiple databases

NEWS EXPRESS NOVEMBER 10 CURRENT WINDOWS VERSION IS V8.01c, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP), AND CURRENT DISCOVER FILE IS DATED 25 SEPTEMBER 2006.

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NEWS LOGIN	Welcome Banner and News Items
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=> File HCAPLUS

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FILE COVERS 1907 - 8 Feb 2007 VOL 146 ISS 7

FILE LAST UPDATED: 7 Feb 2007 (20070207/ED)

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This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s bacillus AND tyr-trNA

94521 BACILLUS

1 BACILLUSES

12599 BACILLI

13 BACILLIS

103044 BACILLUS

(BACILLUS OR BACILLUSES OR BACILLI OR BACILLIS)

27904 TYR

93 TYRS

27989 TYR

(TYR OR TYRS)

32251 TRNA

6404 TRNAS

33101 TRNA

(TRNA OR TRNAS)

18 TYR-TRNA

(TYR(W) TRNA)

L1 3 BACILLUS AND TYR-TRNA

=> s stearophilus AND tyr-trNA

0 STEAROPHILLUS

27904 TYR

93 TYRS

27989 TYR

(TYR OR TYRS)

32251 TRNA

6404 TRNAS
 33101 TRNA
 (TRNA OR TRNAS)
 18 TYR-TRNA
 (TYR(W) TRNA)
 L2 0 STEAROPHILLUS AND TYR-TRNA

 => s stearothermophilus AND tyr-tRNA
 5319 STEAROTHERMOPHILUS
 27904 TYR
 93 TYRS
 27989 TYR
 (TYR OR TYRS)
 32251 TRNA
 6404 TRNAS
 33101 TRNA
 (TRNA OR TRNAS)
 18 TYR-TRNA
 (TYR(W) TRNA)
 L3 2 STEAROTHERMOPHILUS AND TYR-TRNA

=> s L1 or L3
 L4 3 L1 OR L3

=> d ti, so, ibib 1-3 L4

L4 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2007 ACS on STN
 TI tRNA determinants for transcription antitermination of the
 Bacillus subtilis tyrS gene
 SO RNA (2000), 6(8), 1131-1141
 CODEN: RNARFU; ISSN: 1355-8382
 ACCESSION NUMBER: 2000:568923 HCAPLUS
 DOCUMENT NUMBER: 134:26005
 TITLE: tRNA determinants for transcription antitermination of
 the Bacillus subtilis tyrS gene
 AUTHOR(S): Grundy, Frank J.; Collins, Jennifer A.; Rollins, Sean
 M.; Henkin, Tina M.
 CORPORATE SOURCE: Department of Microbiology, The Ohio State University,
 Columbus, OH, 43210, USA
 SOURCE: RNA (2000), 6(8), 1131-1141
 CODEN: RNARFU; ISSN: 1355-8382
 PUBLISHER: Cambridge University Press
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2007 ACS on STN
 TI Chloride affects the interaction between tyrosyl-tRNA synthetase and tRNA
 SO Biochimica et Biophysica Acta, General Subjects (1999), 1472(1-2), 51-61
 CODEN: BBGSB3; ISSN: 0304-4165
 ACCESSION NUMBER: 1999:750814 HCAPLUS
 DOCUMENT NUMBER: 132:32579
 TITLE: Chloride affects the interaction between tyrosyl-tRNA
 synthetase and tRNA
 AUTHOR(S): Airas, R. Kalervo
 CORPORATE SOURCE: Department of Biochemistry, University of Turku,
 Turku, FIN-20014, Finland
 SOURCE: Biochimica et Biophysica Acta, General Subjects
 (1999), 1472(1-2), 51-61
 CODEN: BBGSB3; ISSN: 0304-4165
 PUBLISHER: Elsevier B.V.
 DOCUMENT TYPE: Journal

LANGUAGE: English
REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2007 ACS on STN
TI Tyrosyl-tRNA synthetase acts as an asymmetric dimer in charging tRNA. A
rationale for half-of-the sites activity
SO Biochemistry (1988), 27(15), 5525-30
CODEN: BICHAW; ISSN: 0006-2960
ACCESSION NUMBER: 1988:450783 HCAPLUS
DOCUMENT NUMBER: 109:50783
TITLE: Tyrosyl-tRNA synthetase acts as an asymmetric dimer in
charging tRNA. A rationale for half-of-the sites
activity
AUTHOR(S): Ward, Walter H. J.; Fersht, Alan R.
CORPORATE SOURCE: Dep. Chem., Imp. Coll. Sci. Technol., South
Kensington/London, SW7 2AY, UK
SOURCE: Biochemistry (1988), 27(15), 5525-30
CODEN: BICHAW; ISSN: 0006-2960
DOCUMENT TYPE: Journal
LANGUAGE: English

=> d all 1, 3 L4

L4 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 2000:568923 HCAPLUS
DN 134:26005
ED Entered STN: 17 Aug 2000
TI tRNA determinants for transcription antitermination of the
Bacillus subtilis tyrS gene
AU Grundy, Frank J.; Collins, Jennifer A.; Rollins, Sean M.; Henkin, Tina M.
CS Department of Microbiology, The Ohio State University, Columbus, OH,
43210, USA
SO RNA (2000), 6(8), 1131-1141
CODEN: RNARFU; ISSN: 1355-8382
PB Cambridge University Press
DT Journal
LA English
CC 3-4 (Biochemical Genetics)
Section cross-reference(s): 7, 10
AB Transcriptional regulation of the T box family of aminoacyl-tRNA
synthetase and amino acid biosynthesis genes in Gram-pos. bacteria is
mediated by a conserved transcription antitermination system, in which
readthrough of a termination site in the leader region of the mRNA is
directed by a specific interaction with the cognate uncharged tRNA. The
specificity of this interaction is determined in part by pairing of the
anticodon of the tRNA with a "specifier sequence" in the leader, a codon
representing the appropriate amino acid, as well as by pairing of the
acceptor end of the tRNA with an unpaired region of the antiterminator.
Previous studies have indicated that although these interactions are
necessary for antitermination, they are unlikely to be sufficient. In the
current study, the effect of multiple mutations in tRNA^{Tyr} on readthrough
of the tyrS leader region terminator, independent of other tRNA functions,
was assessed using a system for in vivo expression of pools of tRNA
variants; this system may be generally useful for in vivo expression of
RNAs with defined end points. Although alterations in helical regions of
tRNA^{Tyr} that did not perturb base pairing were generally permitted,
substitutions affecting conserved features of tRNAs were not. The long
variable arm of tRNA^{Tyr} could be replaced by either a short variable arm
or a long insertion of a stable stem-loop structure. These results
indicate that the tRNA-leader RNA interaction is highly constrained, and
is likely to involve recognition of the overall tertiary structure of the

tRNA.

ST tyrosine tRNA *Bacillus* transcription antitermination *tyrS* gene

IT RNA
 RL: BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process)
 (leader; tRNA determinants for transcription antitermination of *Bacillus subtilis tyrS* gene)

IT *Bacillus subtilis*
 Transcription termination
 Transcriptional regulation
 (tRNA determinants for transcription antitermination of *Bacillus subtilis tyrS* gene)

IT Gene, microbial
 RL: BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process)
 (tyrS; tRNA determinants for transcription antitermination of *Bacillus subtilis tyrS* gene)

IT tRNA
 RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
 (tyrosine-specific; tRNA determinants for transcription antitermination of *Bacillus subtilis tyrS* gene)

IT 9023-45-4, Tyrosyl-tRNA synthetase
 RL: BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)
 (tRNA determinants for transcription antitermination of *Bacillus subtilis tyrS* gene)

RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Bedouelle, H; Biochimie 1993, V75, P1099 HCAPLUS
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- (3) Francklyn, C; Nature 1989, V337, P478 HCAPLUS
- (4) Garrity, D; Genetics 1994, V137, P627 HCAPLUS
- (5) Giege, R; Prog Nucl Acid Res 1993, V45, P129 HCAPLUS
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- (7) Grundy, F; J Bacteriol 1990, V172, P6372 HCAPLUS
- (8) Grundy, F; J Bacteriol 1994, V176, P2108 HCAPLUS
- (9) Grundy, F; J Bacteriol 1994, V176, P4518 HCAPLUS
- (10) Grundy, F; J Bacteriol 1997, V179, P2587 HCAPLUS
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- (18) McClain, W; J Mol Biol 1988, V203, P549 HCAPLUS
- (19) McClain, W; J Mol Biol 1999, V286, P1025 HCAPLUS
- (20) Miller, J; Experiments in molecular genetics 1972
- (21) Puglisi, J; Nucleic Acids Res 1993, V21, P41 HCAPLUS
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- (24) Sampson, J; Biochemistry 1990, V29, P2523 HCAPLUS
- (25) Sprinzl, M; Nucleic Acids Res 1998, V26, P148 HCAPLUS
- (26) Stragier, P; Cell 1988, V52, P697 HCAPLUS
- (27) Wang, S; Biochemistry 1998, V37, P5549 HCAPLUS
- (28) Wu, J; J Bacteriol 1989, V171, P692 HCAPLUS

L4 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 1988:450783 HCAPLUS

DN 109:50783

ED Entered STN: 19 Aug 1988

TI Tyrosyl-tRNA synthetase acts as an asymmetric dimer in charging tRNA. A rationale for half-of-the sites activity
 AU Ward, Walter H. J.; Fersht, Alan R.
 CS Dep. Chem., Imp. Coll. Sci. Technol., South Kensington/London, SW7 2AY, UK
 SO Biochemistry (1988), 27(15), 5525-30
 CODEN: BICHAW; ISSN: 0006-2960
 DT Journal
 LA English
 CC 7-4 (Enzymes)
 AB Tyrosyl-tRNA synthetase (I) of *Bacillus stearothermophilus* is a classical example of an enzyme with half-of-the-sites activity. I crystallizes as a sym. dimer that is composed of identical subunits, each having a complete active site. In solution, however, I binds tightly, and activates rapidly, only 1 mol of tyrosine (Tyr)/mol dimer. The half-of-the-sites activity was recently shown to result from an inherent asymmetry of the enzyme. Only 1 subunit catalyzes formation of Tyr-AMP, and interchange of activity between subunits is not detectable over a long time scale. Paradoxically, however, the kinetics of tRNA charging are biphasic with respect to Tyr concentration, suggesting that both subunits of the dimer are catalytically active. This paradox was resolved by kinetic anal. of heterodimeric enzymes containing different mutations in each subunit. Biphasic kinetics with unchanged K_m values for Tyr were maintained when 1 of the 2 tRNA-binding domains was removed and also when the affinity of the inactive site for Tyr was reduced by 2-58-fold. The biphasic kinetics thus do not result from catalysis at both active sites, but instead appear to result from sequential binding of 2 mols. of Tyr to the same site. A 2nd mol. of Tyr perhaps aids the dissociation of Tyr-tRNA by displacing the tyrosyl moiety from its binding site. A I monomer is probably too small to allow both recognition and aminoacylation of a tRNA mol. This could explain the requirement for I to function as an asym. dimer.
 ST tyrosyl tRNA synthetase dimer mechanism *Bacillus*
 IT Kinetics, enzymic
 Michaelis constant
 (of tyrosyl-tRNA synthetase, of *Bacillus stearothermophilus*, reaction mechanism in relation to)
 IT 9023-45-4, Tyrosyl-tRNA synthetase
 RL: BIOL (Biological study)
 (dimer, of *Bacillus stearothermophilus*, reaction mechanism of, half-of-the-sites activity in relation to)
 IT 60-18-4, Tyrosine, biological studies
 RL: BIOL (Biological study)
 (tyrosyl-tRNA synthetase response to, mechanism of, enzyme reaction kinetics in relation to)